STATE OF MICHIGAN

COURT OF APPEALS

DENNIS UPPLEGER and KATHY UPPLEGER,

Plaintiffs-Appellants,

v

MCLAREN PORT HURON, NALINI SAMUEL, M.D., individually and doing business as BLUE WATER NEUROLOGY CLINIC, PC, DEVPRAKASH SAMUEL, M.D.,[1] AUBREY JOZEFIAK, R.N., MELISSA COOK, R.N., MICHELLE FRANCISCO, R.N., and CATHERINE FOURNIER, R.N.,

Defendants-Appellees.

UNPUBLISHED
October 22, 2020

Nos. 348551; 348928
St. Clair Circuit Court
LC No. 17-000559-NH

Before: BECKERING, P.J., and FORT HOOD and SHAPIRO, JJ.

PER CURIAM.

These consolidated appeals arise from the same medical malpractice case. In Docket No. 348551, plaintiffs, Dennis and Kathy Uppleger, appeal as of right the trial court's order granting summary disposition to defendants Devprakash Samuel, M.D. ("Dr. D. Samuel"), and Blue Water

[1] It appears that defendant Devprakash Samuel, M.D. ("Dr. D. Samuel") was, along with his sister, defendant Nalini Samuel, M.D. ("Dr. N. Samuel"), doing business as Blue Water Neurology Clinic, PC ("Blue Water"), although the captions below and on appeal do not identify Dr. D. Samuel as doing business as Blue Water, while Dr. N. Samuel is so identified in the captions. Dr. D. Samuel practiced neurological medicine with Dr. N. Samuel, who was dismissed by stipulation early in the litigation because she was not involved in the medical treatment in this case. The later order granting summary disposition to Dr. D. Samuel was titled as an order of dismissal of Dr. D. Samuel and Blue Water, and the appellate briefing indicates that the attorney representing Dr. D. Samuel also purports to represent Blue Water, even though Blue Water is apparently not a separate legal entity.

Neurology Clinic, PC ("Blue Water"). In Docket No. 348928, plaintiffs appeal as of right the trial court's amended order granting summary disposition to defendants McLaren Port Huron ("MPH"), Aubrey Jozefiak, R.N., Melissa Cook, R.N., Michelle Francisco, R.N., and Catherine Fournier, R.N. (referred to collectively as "the McLaren defendants"), and they also challenge the trial court's earlier denial of their motion to compel discovery.[2] This Court consolidated the appeals.[3] The trial court dismissed plaintiffs' case on the ground that they failed to create a genuine issue of material fact as to whether any of the defendants' alleged negligence proximately caused plaintiffs' injuries. After a careful review of the record evidence in the light most favorable to plaintiffs, we affirm the trial court's rulings.

I. RELEVANT FACTS AND PROCEEDINGS

On Sunday, August 2, 2015, Mr. Uppleger presented to the MPH emergency department with signs and symptoms of a transient ischemic attack (TIA)[4], which may be a warning sign of a future stroke.[5] An emergency department physician examined Mr. Uppleger and ordered a CT of his brain. He also ordered the continuation of aspirin administration, which Mr. Uppleger had taken before his arrival. The CT scan showed no evidence of an acute hemorrhage or mass effect. Mr. Uppleger was kept for observation. Defendant-nurses provided care to Mr. Uppleger at various times during his stay at MPH. A neurology consultation request was sent to defendant Nalini Samuel, M.D. ("Dr. N. Samuel") at 2:03 p.m. Dr. N. Samuel had an informal arrangement with her brother, Dr. D. Samuel, who was also a neurologist, whereby Dr. D. Samuel would carry their pagers and decide whether to handle a consultation request himself or refer it to Dr. N. Samuel, and Dr. D. Samuel handled this consultation request himself.

While Mr. Uppleger was in the MPH emergency department his National Institutes of Health Stroke Scale (NIHSS) score was found to be 0 (on a scale of 0 to 42) at 10:50 a.m., 11:50 a.m., 1:00 p.m., 2:00 p.m., and 3:00 p.m.[6] Shortly before 6:30 p.m., Mr. Uppleger was transferred

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[2] Jozefiak, Cook, Francisco, and Fournier will sometimes be referred to collectively as "defendant-nurses," but we will use the term "the McLaren defendants" when referring to MPH and defendant-nurses.

[3] *Uppleger v McLaren Port Huron*, unpublished order of the Court of Appeals, entered May 28, 2019 (Docket Nos. 348551 and 348928).

[4] The trial court provided definitions of the medical terminology relevant to this case, the accuracy of which the parties do not contest, and which we will requote here. A TIA as "a temporary blockage of blood flow to the brain that does not result in permanent damage. Symptoms can last for up to 24 hours, but are usually gone in an hour."

[5] The trial court defined a stroke as "a cerebral vascular accident. It is caused by a blood clot stopping blood going through a vessel in the brain or a bleed in the brain. High blood pressure, high cholesterol and smoking are factors that can result in [a] stroke."

[6] The trial court explained:

to the MPH observation unit. His NIHSS score was determined to be 0 at 7:02 p.m. and at 8:00 p.m. Between 8:00 p.m. and 8:48 p.m., Dr. Ponon Kumar, M.D., an internal medicine physician at MPH, physically examined Mr. Uppleger in the observation unit, took a detailed history of his condition, and wrote in the chart that a neurological evaluation and neurological checks would be conducted.

At 10:20 p.m., Mr. Uppleger experienced a severe headache as well as numbness in his left leg. Nurse Jozefiak called a "code stroke" because of these worsening symptoms. A "code stroke" team arrived to evaluate Mr. Uppleger. Jozefiak paged Dr. D. Samuel to inform him of Mr. Uppleger's worsening symptoms. Another CT scan of Mr. Uppleger's head was conducted. At 11:13 p.m., the radiologist wrote that this CT scan showed no significant changes from the CT scan performed earlier that day and that there was no evidence of an acute hemorrhage in the brain.

At 11:00 p.m., Mr. Uppleger was transferred to the MPH "select care" or "step down" unit, where Cook was his attending nurse. His NIHSS score was found to be 1 at 11:02 p.m. and was again determined to be 1 shortly after midnight.

At 12:09 a.m. on Monday, August 3, 2015, Cook spoke by telephone with Dr. D. Samuel about Mr. Uppleger's condition. Dr. D. Samuel did not provide any new orders at that time. Shortly after 3:00 a.m., Mr. Uppleger began experiencing "left sided drifting of [his] upper and lower extremities," meaning that he could not "control his left side very well." At 3:59 a.m., Dr. D. Samuel was paged regarding this new onset of central nervous system symptoms. The chart indicates that he did not respond to the page. According to the chart, he was paged an additional six times between 4:00 a.m. and 5:00 a.m., but each time he failed to respond.[7] Mr. Uppleger's NIHSS score, however, remained at a 3 at 3:02 a.m., 5:02 a.m., 6:32 a.m., and 9:02 a.m. [8]

> The NIH [s]troke [s]cale is a systematic assessment tool that provides a quantitative measure of stroke-related neurological deficits. The scale ranges from 0-42 and consists of different elements that evaluate specific abilities including consciousness, vision, facial palsy, motor strength, sensory and speech. The scale has three major purposes: 1) It evaluates the severity of the stroke; 2) it helps determine the appropriateness of the treatment; and 3) it predicts patient outcome.

[7] Defense expert Dr. William Leuchter, M.D. agreed that failing to respond to a page is a violation of the standard of care. Also, Mrs. Uppleger testified that when she asked Dr. D. Samuel why he did not respond to the pages, he told her he had not received any pages and suggested that she should have taken her husband to a different hospital. Were we faced with evaluating the standard of care and whether plaintiffs created a material question of fact on whether Dr. D. Samuel breached the standard of care for not timely showing up to evaluate Mr. Uppleger despite repeated calls and updates from the hospital, this case would clearly go to a jury on that valid question. However, that is not the issue before us.

[8] Plaintiffs do not take issue with the accuracy of the NIHSS ratings assigned to Mr. Uppleger at various times throughout his stay at MPH.

At 8:00 a.m., Dr. D. Samuel examined Mr. Uppleger and concluded that he had likely suffered "an acute right posterior cerebral artery infarct" and recommended that he "undergo a[n] MRI of the brain for further evaluation of acute stroke." However, Mr. and Mrs. Uppleger told Dr. Kumar that they wanted Mr. Uppleger to be transferred to William Beaumont Hospital ("Beaumont") in Royal Oak, Michigan, for further stroke evaluation and treatment. Mr. Uppleger's NIHSS score remained at a 3 until he was transported to Beaumont by helicopter at around noon.

At Beaumont, healthcare providers determined that Mr. Uppleger's NIHSS score at that time was 10. In assessing proper treatment, his care providers concluded that he was not a candidate for an interventional procedure called a thrombectomy or for the administration of a drug called alteplase, also known as tissue plasminogen activator ("t-PA").[9] On August 5, 2015, Mr. Uppleger's NIHSS score had fallen to 5 and his condition was improving, even though no interventional procedure was performed and no t-PA was administered.

Plaintiffs filed this action alleging, as relevant to these appeals, medical malpractice on the part of Dr. D. Samuel, nursing malpractice on the part of defendant-nurses, and vicarious liability and direct liability claims against MPH. Mrs. Uppleger asserted a loss of consortium claim. Plaintiffs further alleged that various statutory provisions characterized by plaintiffs as tort reform legislation were unconstitutional.

During the discovery process, plaintiffs filed a motion to compel discovery regarding various documents and information, including MPH's internal rules and regulations regarding the supervision and training of nurses, information regarding MPH's certification as a primary stroke center, and deposition testimony from defendant-nurses on these matters. The trial court denied the motion to compel.

Later, the McLaren defendants filed a motion for summary disposition asserting that plaintiffs could not demonstrate a genuine issue of material fact on the causation element of their malpractice claims. The McLaren defendants also sought dismissal of plaintiffs' constitutional claim and Mrs. Uppleger's loss of consortium claim. Dr. D. Samuel and Blue Water likewise moved for summary disposition on the ground that plaintiffs could not demonstrate a genuine issue of material fact on causation, and they joined the McLaren defendants' request for dismissal of plaintiffs' constitutional claim. Plaintiffs opposed the motion, and the parties filed extensive briefing. After a hearing, the trial court took the matters under advisement. The trial court later issued a written opinion granting both motions for summary disposition, followed by orders of dismissal.

[9] The trial court explained that t-PA "is an injectable drug that is used to treat conditions caused by arterial blood clots including strokes. The most serious side effect of t-PA is bleeding into the brain (intracranial hemorrhage) or fatal bleeding."

II. ANALYSIS

A. SUMMARY DISPOSITION

In both appeals, plaintiffs argue that the trial court erred in granting summary disposition to defendants on the medical and nursing malpractice claims. Plaintiffs contend that they demonstrated a genuine issue of material fact on the causation element of their malpractice claims.

This Court reviews de novo a trial court's decision regarding a motion for summary disposition. *El-Khalil v Oakwood Healthcare, Inc*, 504 Mich 152, 159; 934 NW2d 665 (2019). A motion under MCR 2.116(C)(10) tests whether a claim is factually sufficient. *Id*. at 160.

> When considering such a motion, a trial court must consider all evidence submitted by the parties in the light most favorable to the party opposing the motion. A motion under MCR 2.116(C)(10) may only be granted when there is no genuine issue of material fact. A genuine issue of material fact exists when the record leaves open an issue upon which reasonable minds might differ. [*Id*. (quotation marks and citations omitted).]

To the extent that this issue implicates the trial court's exercise of its gatekeeper function with respect to the admissibility of expert testimony, it involves the review of an evidentiary determination. "A trial court's decision to admit or exclude evidence is reviewed for an abuse of discretion. An abuse of discretion occurs when the trial court chooses an outcome falling outside the range of principled outcomes." *Edry v Adelman*, 486 Mich 634, 639; 786 NW2d 567 (2010) (citation omitted). "[T]he proponent of evidence bears the burden of establishing relevance and admissibility." *Id*. (quotation marks, ellipsis, and citation omitted).

> The plaintiff in a medical malpractice action bears the burden of proving: (1) the applicable standard of care, (2) breach of that standard by the defendant, (3) injury, and (4) proximate causation between the alleged breach and the injury. Failure to prove any one of these elements is fatal. Although nurses do not engage in the practice of medicine, the Legislature has made malpractice actions available against any licensed healthcare professional, including nurses. [*Cox v Hartman*, 322 Mich App 292, 299-300; 911 NW2d 219 (2017) (quotation marks and citation omitted).]

The basic elements of a medical malpractice claim apply to a nursing malpractice claim, although the standard of care applicable to nurses differs from that applicable to physicians. See *Cox ex rel Cox v Flint Bd of Hosp Managers*, 467 Mich 1, 5, 10-12, 21-22; 651 NW2d 356 (2002). Also, "[a] hospital may be 1) directly liable for malpractice, through claims of negligence in supervision

of staff physicians as well as selection and retention of medical staff, or 2) vicariously liable for the negligence of its agents." *Id*. at 11.[10]

MCL 600.2912a(2) provides:

> In an action alleging medical malpractice, the plaintiff has the burden of proving that he or she suffered an injury that more probably than not was proximately caused by the negligence of the defendant or defendants. In an action alleging medical malpractice, the plaintiff cannot recover for loss of an opportunity to survive or an opportunity to achieve a better result unless the opportunity was greater than 50%.

"Proximate cause is a question for the jury to decide unless reasonable minds could not differ regarding the issue." *Lockridge v Oakwood Hosp*, 285 Mich App 678, 684; 777 NW2d 511 (2009). "To establish proximate cause, the plaintiff must prove the existence of both cause in fact and legal cause." *Weymers v Khera*, 454 Mich 639, 647; 563 NW2d 647 (1997).

To show factual causation, "the plaintiff must present *substantial evidence* from which a jury may conclude that more likely than not, but for the defendant's conduct, the plaintiff's injuries would not have occurred." *Badalamenti v William Beaumont Hosp-Troy*, 237 Mich App 278, 285; 602 NW2d 854 (1999) (quotation marks and citation omitted).

> The plaintiff must introduce evidence which affords a reasonable basis for the conclusion that it is more likely than not that the conduct of the defendant was a cause in fact of the result. A mere possibility of such causation is not enough; and when the matter remains one of pure speculation or conjecture, or the probabilities are at best evenly balanced, it becomes the duty of the court to direct a verdict for the defendant. [*Weymers*, 454 Mich at 648 (quotation marks and citation omitted).]

That is, a plaintiff's circumstantial proofs must facilitate reasonable inferences of causation rather than mere speculation. *Badalamenti*, 237 Mich App at 285. "[A] plaintiff establishes that the defendant's conduct was a cause in fact of his injuries only if he sets forth specific facts that would support a reasonable inference of a logical sequence of cause and effect." *Craig ex rel Craig v Oakwood Hosp*, 471 Mich 67, 87; 684 NW2d 296 (2004). Although the evidence need not negate all other possible causes, it must "exclude other reasonable hypotheses with a fair amount of certainty." *Id*. at 88 (quotation marks and citation omitted).

"Legal or proximate cause normally involves examining the foreseeability of consequences and whether a defendant should be held legally responsible for them." *Lockridge*, 285 Mich App

[10] The trial court implicitly treated plaintiffs' direct liability claim against MPH as sounding in medical malpractice by granting summary disposition to all defendants on the basis of plaintiffs' failure to demonstrate a genuine issue of material fact on the element of causation that is part of a malpractice claim. Plaintiffs make no argument on appeal that the trial court erred in treating the direct liability claim against MPH as sounding in medical malpractice. In any event, we discern no error in the trial court's implicit determination on this point.

at 684. That is, legal cause requires a plaintiff to "show that it was foreseeable that the defendant's conduct may create a risk of harm to the victim, and that the result of that conduct and intervening causes were foreseeable." *Id*. (quotation marks, brackets, ellipsis, and citation omitted).

In medical malpractice actions, "[e]xpert testimony is required to establish the standard of care and a breach of that standard, as well as causation." *Kalaj v Khan*, 295 Mich App 420, 429; 820 NW2d 223 (2012) (citations omitted). "The proponent of expert testimony in a medical malpractice case must satisfy the court that the expert is qualified under MRE 702, MCL 600.2955 and MCL 600.2169." *Elher v Misra*, 499 Mich 11, 22; 878 NW2d 790 (2016).[11]

MRE 702 provides:

> If the court determines that scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise if (1) the testimony is based on sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

"This rule requires the circuit court to ensure that each aspect of an expert witness's testimony, including the underlying data and methodology, is reliable." *Elher*, 499 Mich at 22. "A lack of supporting literature, while not dispositive, is an important factor in determining the admissibility of expert witness testimony." *Id*. at 23. "Under MRE 702, it is generally not sufficient to simply point to an expert's experience and background to argue that the expert's opinion is reliable and, therefore, admissible." *Id*. (quotation marks and citation omitted). Further, "[t]he reliability of the expert's testimony is to be determined by the *judge* in advance of its admission—not by the jury at the conclusion of the trial by evaluating the testimony of competing expert witnesses." *Tobin v Providence Hosp*, 244 Mich App 626, 651; 624 NW2d 548 (2001).

If an expert's opinion is inadmissible under MRE 702, then it is unnecessary to consider whether the expert's opinion is admissible under MCL 600.2955. *Edry*, 486 Mich at 642 n 7.

Plaintiffs claimed that malpractice on the part of Dr. D. Samuel and the McLaren defendants caused Mr. Uppleger's stroke-related injuries to occur or worsen because he should have received more timely neurological evaluation and treatment, including the administration of t-PA or the performance of a thrombectomy.[12] In support of this contention, plaintiffs relied on

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[11] In *Elher*, our Supreme Court noted that "MCL 600.2169 relates to the expert's license and qualifications and is not in dispute in this case." *Elher*, 499 Mich at 22 n 12. Likewise, in the instant case, there is no dispute regarding the requirements of MCL 600.2169.

[12] Plaintiffs also alleged that a drug called heparin should have been administered, but plaintiffs have effectively abandoned that argument on appeal and have identified no evidence that Mr. Uppleger was an appropriate candidate for heparin or that it would have made a difference in his condition.

the testimony of their neurology expert, Dr. David Frecker. But as the trial court found, plaintiffs needed to prove that Mr. Uppleger was a candidate for t-PA or a thrombectomy, and that, if such treatment had been provided, he would have had a greater than 50% chance of achieving a better outcome. Plaintiffs were unable to provide such proof.

In support of their motions for summary disposition, defendants presented the deposition testimony of neurologist Dr. Seemant Chaturvedi, M.D. Dr. Chaturvedi testified that t-PA is usually administered to patients who have an NIHSS score higher than 5 and that, under Food and Drug Administration (FDA) guidelines, a low NIHHS score is a relative contraindication for the administration of t-PA. The undisputed medical records in this case show that Mr. Uppleger's NIHHS score never rose higher than 3 while at MPH; the administration of t-PA was thus not indicated. Dr. Chaturvedi further testified that t-PA works in only a fraction of patients; it is effective for only about one out of three patients. Dr. Chaturvedi's testimony on this point regarding the limited effectiveness of t-PA was consistent with medical literature provided by Dr. D. Samuel and Blue Water. Dr. Chaturvedi also testified that Mr. Uppleger was "[d]efinitely not" a candidate for a thrombectomy (also sometimes referred to as an embolectomy by the expert witnesses and the parties in this case) "[b]ecause embolectomy is done for people with large vessel occlusion and, typically, the internal carotid/middle cerebral artery, and so his stroke was not in one of those two vessels, so he wasn't a candidate for a thrombectomy." Dr. Chaturvedi's testimony found support in the 2013 American Heart Association and American Stroke Association Early Management Guidelines, which indicated that thrombectomy was an appropriate treatment for an occlusion of the middle cerebral artery.[13]

Dr. William M. Leuchter, M.D., another defense neurology expert, testified that he would not have administered t-PA to Mr. Uppleger when his NIHSS score rose to a 3 beginning at 3:02 a.m. on August 3, 2015. Dr. Leuchter explained that Mr. Uppleger's NIHSS score "wasn't above four or five. And that's a relative contraindication [for the administration of t-PA], based upon the [National Institute of Neurological Disorders and Stroke, i.e. "NINDS"] criteria." Dr. Leuchter noted the current medical view is that aspirin is more effective and less risky than t-PA in treating minor strokes, generally defined as an NIHSS of 5 or less, because aspirin carries no risk of hemorrhage, whereas t-PA does in fact carry such a risk. Minor stroke patients with an NIHSS score of 3 should not be given t-PA because of the risk of cerebral hemorrhage from the use of t-PA. Dr. Leuchter's testimony in this regard is in general accordance with medical literature provided by Dr. D. Samuel and Blue Water.

Dr. Leuchter further explained that "the use of thrombectomy, by and large, is, from a standard of care perspective, limited to internal carotid artery and main stem middle cerebral arteries, proximal middle cerebral arteries." Dr. Leuchter continued:

[13] The 2013 guidelines were current at the time of Mr. Uppleger's treatment. The 2018 guidelines, which updated the 2013 guidelines, indicate that thrombectomy is appropriate for an occlusion of the internal carotid artery or the proximal middle cerebral artery when a patient has an NIHSS score of 6 or higher.

> The right posterior cerebral artery [where Mr. Uppleger's occlusion occurred] would be a medium size vessel, which would not be amenable to sticking a catheter all the way up to the posterior cerebral artery and the posterior circulation. So I don't believe, if you look up the 2018 criteria, it's even mentioned in the guidelines for thrombectomy.

In short, a thrombectomy in that area would be "[t]oo risky. Sticking a catheter up the basal artery, there's a markedly increased risk of death. The risk mitigates the usage of it. Plus the vessel is too small to get at."

As noted, in opposition to defendants' motions for summary disposition, plaintiffs presented the testimony of Dr. Frecker. Dr. Frecker testified that t-PA should have been administered even though Mr. Uppleger's NIHSS score was lower than 5, at which time arrangements would have to be made simultaneously to transfer him to a hospital equipped to deal with and manage "the most feared complications of t-PA, which is intracranial hemorrhage," and that Mr. Uppleger would have had a greater than 50% chance of achieving a better outcome if he had been treated with t-PA. Dr. Frecker's testimony is dependent on a 2008 medical journal article that the parties and witnesses have referred to as "the Zivin article," based on the name of one of its authors.[14]

[14] The article is titled *Review of Tissue Plasminogen Activator, Ischemic Stroke, and Potential Legal Issues*, and it was published in the journal, Archives of Neurology. In addition to the Zivin article, Dr. Frecker relies on a 1995 article published in the New England Journal of Medicine titled *Tissue Plasminogen Activator for Acute Ischemic Stroke*, which reviewed the work of the stroke study group established by the National Institute of Neurological Disorders (NINDS), and a 1997 article titled *Generalized Efficacy of t-PA for Acute Stroke: Subgroup Analysis of NINDS t-PA Stroke Trial.* But neither article supports Dr. Frecker's opinions as to either the applicability or the efficacy level with respect to administering t-PA to Mr. Uppleger given his presenting condition while at MPH. The NINDS study arose after an initial pilot study showed that t-PA was beneficial when administered within three hours of the onset of a stroke. The NINDS study had two parts. Part I measured the benefits of t-PA after 24 hours. Part II measured the benefits of t-PA after 90 days. The results were that there was no significant effect at 24 hours, and that after 90 days benefit was shown in 30% of patients. This was not at or above the more-likely-than-not level required to establish proximate causation. Indeed, the measure of a "favorable outcome" after 24 hours was a decrease in the NIHSS score of 4 or more points, which suggests that t-PA was administered only to those with an NIHSS score of at least 4. But it is an undisputed fact in this case that Mr. Uppleger's NIHSS score never rose above 3 while at MPH.

Notably, the Zivin article arrives at its conclusions after conducting a statistical reanalysis (or in the words of Dr. Frecker, a "reconstruction") of the 1995 NINDS study, which the trial court in the instant case deemed methodologically flawed, and which Dr. Frecker admitted was "way beyond my understanding of statistics, using paranalysis." For the reasons explained in this opinion, we conclude that the trial court did not abuse its discretion in deeming the Zivin article

Dr. D. Samuel and Blue Water submitted to the trial court testimony that Dr. Chaturvedi had provided regarding the Zivin article on August 23, 2018, in a hearing in another case. In that testimony, Dr. Chaturvedi explained that the Zivin article, which claimed that approximately 58% of patients who receive t-PA will achieve a better outcome, utilized a methodology that no other study of stroke trials published in high profile journals has used. The Zivin article failed to explain why approximately 100 patients, who were part of the original study analyzed in the Zivin article, were excluded from the calculations used in the Zivin article. Further, Dr. Chaturvedi explained, the Zivin article used a "concept of establishing pairs and then breaking the tie by looking at the NIH score," which is a concept that has "never really been done in any other analysis over the last 25 years and so I think that is evidence that the mainstream stroke community doesn't really view this as a proper way to analyze the data." Also, multiple respected neurologists have written letters to the editor of the journal that published the Zivin article, noting that the data used in the article were wrong and that t-PA benefits only a minority of patients.

Dr. Chaturvedi likewise testified in the instant case about the flaws in the Zivin article:

> I mean, the major weaknesses are they didn't use the entire data set from the original study. So the original study had 624 patients. In their analysis they do not include all 624 patients.
>
> And also the methodology that they used was very unusual, and I have not seen this methodology used in any publication since then. And so that sort of implies that it has not gained acceptance within the neurology or the stroke community.
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> And then, finally, most papers have—scientific papers and peer-reviewed journals have a methods section, and they don't really even provide a methods section for the reader to review.
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> And so I think this paper has those major shortcomings.

Dr. Leuchter expressed similar criticisms of the Zivin article:

> *Q.* . . . Do you believe the [Zivin article's] indication that the treatment with [t-PA] rapidly after ischemic stroke onset can produce complete recovery more often than not?
>
> *A.* Is that within the 50 percent or not?
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> *Q.* Yes.

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materially flawed, and thus excluding Dr. Frecker's causation testimony due to the lack of reliable supporting authority for his causation opinion.

A. No. I disagree with that.

Q. Do you agree or disagree, overall the probability of [t-PA] treatment was superior was 57.3 percent?

A. Right. I disagree with that. In fact, I have a lot of disagreement with this article in general.

Q. Do you agree with the article's conclusion that, hence, from the several ways of examining the data, the majority of patients with acute stroke treated with intravenous [t-PA] had a complete recovery or are improved by [t-PA] treatment?

A. I vehemently disagree with that statement.

Dr. Leuchter explained that the Zivin article "is fraught with a lot of methodological errors that everybody who I know of has trouble digesting in this article." Dr. Leuchter noted that the Zivin article "wasn't an initial research paper, it was a review article reviewing the NINDS data, and the mathematical methodology involved I don't quite understand and neither does anybody else." When asked if the Zivin article had any applicability to Mr. Uppleger's condition or the treatment that should have been afforded to him, Dr. Leuchter responded: "No. His NIH[SS] score was three, it has no applicability at all."

Overall, the trial court acted in a principled manner by concluding that the Zivin article did not constitute reliable medical literature supporting Dr. Frecker's causation testimony in the case before us.[15] The Zivin article urged more widespread use of t-PA in the treatment of ischemic stroke. The article indicated that only a small fraction of patients who could benefit from t-PA were being given the drug, either because doctors were unaware of the drug's benefits or were being overly conservative because of its proven risks. This continued underuse of t-PA with eligible patients, according to the article, could expose physicians to lawsuits arising from a physician's failure to properly inform patients of their treatment options or to use t-PA where appropriate. Given the criticisms of the article's methodology, one wonders whether the methodological choices made were geared to serve the article's purpose.

More significant for purposes of this appeal is that, although the Zivin article showed that the underlying study had 58 patients with NIH stroke scale scores of 5 or below, whether any of these patients were among the nearly 100 patients excluded from the article's reanalysis of the data cannot be determined. Even if they were included, they were excluded from the article's key point. The article noted that a "more clinically meaningful way to look at the data restricts the analysis

[15] Although not binding on us, we note that a lower federal court has upheld the exclusion of proposed expert testimony that was predicated on the Zivin article. See *Smith v Bubak*, 643 F3d 1137, 1142 (CA 8, 2011) (upholding the exclusion of expert testimony predicated on the Zivin article and stating that, although the Zivin article "does indicate that [t-PA] causes some stroke patients to improve, this result does not reveal whether giving a patient [t-PA] will more likely than not cause a stroke patient to improve, which is the material inquiry under a traditional proximate cause regime[]").

to patients with a baseline NIH [stroke scale score] in the range of 5 to 24." The authors identified this group as the most likely to benefit from or to suffer harm from treatment with t-PA. Of those with NIH stroke scale scores between 5 and 24, 58.6% of those treated with t-PA experienced results better than patients who were given a placebo. Although the Zivin article asserts that t-PA treatment can result in beneficial outcomes to the majority of eligible patients, it does not show that a patient with an NIH stroke scale score of less than 5 falls within that majority. Accordingly, the Zivin article does not support Dr. Frecker's assertion that defendants' failure to administer t-PA to Mr. Uppleger, whose NIH stroke score while at MPH never rose above 3, proximately caused his injuries.

Given the absence of reliable medical literature or any other support for his opinions, Dr. Frecker's causation testimony was not based on sufficient facts or data, nor was it the product of reliable principles and methods that were applied reliably to the facts of this case. Dr. Frecker's testimony was thus inadmissible under MRE 702. See *Edry*, 486 Mich at 641 (holding that "the lack of supporting literature, combined with the lack of any other form of support for [the expert's] opinion, renders his opinion unreliable and inadmissible under MRE 702[]").[16]

Contrary to plaintiffs' argument, the trial court did not usurp the jury's role of assessing the credibility of conflicting expert opinions. As noted earlier, "[t]he reliability of the expert's testimony is to be determined by the *judge* in advance of its admission—not by the jury at the conclusion of the trial by evaluating the testimony of competing expert witnesses." *Tobin*, 244 Mich App at 651. The trial court properly exercised its gatekeeper role in determining that Dr. Frecker's causation testimony was unreliable. And there was nothing improper about the trial court considering the testimony of the defense neurology experts, along with the published literature that was provided and the lack of reliable literature supporting Dr. Frecker's opinions, when assessing the reliability of Dr. Frecker's testimony. See *Edry*, 486 Mich at 640 (holding that the opinion of the plaintiff's expert was unreliable when it was contradicted by both the opinion

[16] While making a fleeting reference to the thrombectomy issue in their brief on appeal, plaintiffs otherwise focus exclusively on the t-PA administration claim; thus, it appears they have abandoned the thrombectomy claim. In any event, Dr. Frecker did not testify that Mr. Uppleger was a candidate for a thrombectomy or that, under the circumstances presented here, a thrombectomy would have resulted in a greater than 50% opportunity to achieve a better result. Asked at his deposition what the latest time period was at MPH when Mr. Uppleger could have received t-PA that might have produced a full recovery, Dr. Frecker replied, "the proper answer could include, in the right setting, other treatment modalities, including thrombectomy and oxygenation, blood pressure control, and many other things that could and would have been done either simultaneously with t-PA or, say, if t-PA had failed." This quotation suggests that Dr. Frecker did not envision thrombectomy as an appropriate treatment apart from the administration of t-PA, unless t-PA failed. Further, Dr. Frecker never opined that the "right setting" existed for performing a thrombectomy on Mr. Uppleger. Quite the contrary. In an affidavit in response to the testimony of the defense experts, Dr. Frecker stated that the particular vessel involved in Mr. Uppleger's stroke was a small vessel, not a medium-sized one, as the defense experts had contended. In light of the AHA/ASA guidelines, Dr. Frecker's position that Mr. Uppleger's occlusion was in a small vessel is even more inconsistent with the notion that Mr. Uppleger would be a likely candidate for a thrombectomy.

of the defense expert and the published literature that was admitted into evidence and when no reliable literature was admitted into evidence that supported the opinion of the plaintiff's expert).

Plaintiffs thereby failed to provide admissible expert testimony on factual causation as required to support their medical and nursing malpractice claims. *Kalaj*, 295 Mich App at 429. The trial court thus properly granted summary disposition to defendants because plaintiffs failed to demonstrate a genuine issue of material fact on the element of causation. See *Dykes v William Beaumont Hosp*, 246 Mich App 471, 478; 633 NW2d 440 (2001) (summary disposition for the defendant was proper because the deposition testimony of the plaintiff's sole expert witness failed to establish causation).

Given that plaintiffs failed to demonstrate a genuine issue of material fact regarding factual causation, it is unnecessary to consider legal causation. See *Ray v Swager*, 501 Mich 52, 71 n 42; 903 NW2d 366 (2017) (when factual causation cannot be established, it is unnecessary to analyze legal causation). Anyway, for the same reasons that plaintiffs cannot establish factual causation, they also cannot establish legal causation. As noted, "[l]egal or proximate cause normally involves examining the foreseeability of consequences and whether a defendant should be held legally responsible for them." *Lockridge*, 285 Mich App at 684. It was not foreseeable that defendants' conduct would create a risk of harm to Mr. Uppleger because, as explained earlier, Mr. Uppleger was not a candidate for t-PA or a thrombectomy and, in any event, there was no reliable expert testimony that such treatment would more likely than not have made a difference in his outcome. Accordingly, for all of these reasons, the trial court properly granted summary disposition to defendants given plaintiffs' failure to demonstrate a genuine issue of material fact on causation.

Because the trial court's decision should be affirmed and there is no reason to remand the case for further proceedings, it is unnecessary to consider plaintiffs' argument that the case should be reassigned to a different trial judge on remand. Nor need we consider the McLaren defendants' argument that the trial court correctly dismissed Mrs. Uppleger's loss of consortium claim or defendants' argument that the trial court properly dismissed plaintiffs' constitutional claim. Plaintiffs fail to present any discernable appellate argument challenging the trial court's rulings on those issues and have thus abandoned any contention that the trial court erred in those rulings. *Seifeddine v Jaber*, 327 Mich App 514, 520; 934 NW2d 64 (2019). And because the trial court properly granted summary disposition to defendants on the basis of plaintiffs' failure to demonstrate a genuine issue of material fact on causation, it is unnecessary to address defendants' arguments that summary disposition was proper on various alternative grounds.

B. DISCOVERY

In Docket No. 348928, plaintiffs also contend that the trial court erred in denying their motion to compel discovery. We disagree.

A trial court's ruling on a motion to compel discovery is reviewed for an abuse of discretion. *Cabrera v Ekema*, 265 Mich App 402, 406; 695 NW2d 78 (2005). An abuse of discretion occurs when the trial court's decision falls outside the range of reasonable and principled outcomes. *Augustine v Allstate Ins Co*, 292 Mich App 408, 419; 807 NW2d 77 (2011).

"It is well settled that Michigan follows an open, broad discovery policy that permits liberal discovery of any matter, not privileged, that is relevant to the subject matter involved in the pending case." *Id*. (quotation marks and citation omitted). "However, Michigan's commitment to open and far-reaching discovery does not encompass fishing expeditions. Allowing discovery on the basis of conjecture would amount to allowing an impermissible fishing expedition." *Id*. at 419-420 (quotation marks, brackets, and citations omitted).

Plaintiffs contend that they are entitled to documents and information concerning MPH's certification as a primary stroke center as well as MPH's internal rules, regulations, policies, and procedures concerning the training and supervision of nurses. Plaintiffs also assert entitlement to depose defendant-nurses regarding MPH's internal policies and procedures. Plaintiffs' argument lacks merit because they have not shown that the information and documents requested are relevant to any element of their claims in this case.

A hospital's internal rules, regulations, and policies may not be used to establish the applicable standard of care or breach of that standard. *Zdrojewski v Murphy*, 254 Mich App 50, 62; 657 NW2d 721 (2002); *Gallagher v Detroit-Macomb Hosp Ass'n*, 171 Mich App 761, 765-768; 431 NW2d 90 (1988). Rather, expert testimony is required to satisfy these elements in a malpractice case. *Kalaj*, 295 Mich App at 429; *Decker v Rochowiak*, 287 Mich App 666, 686; 791 NW2d 507 (2010). Plaintiffs have not shown that MPH's internal rules, regulations, and policies were relevant to the subject matter of this case. Although plaintiffs correctly note that the rules of an external agency such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) differ from a hospital's internal rules and policies, *Zdrojewski*, 254 Mich App at 62-63, plaintiffs have not shown how the JCAHO rules are relevant or why those rules of an external agency could only be obtained from the McLaren defendants or are properly the subject of a motion to compel discovery from the McLaren defendants. Plaintiffs have likewise not shown how any documents or information concerning MPH's certification as a primary stroke center would be relevant to any element of a malpractice claim. And because plaintiffs have not shown that any documents or information regarding these matters is subject to discovery, they have also failed to establish entitlement to ask defendant-nurses about these matters at deposition. Overall, plaintiffs have not established that the denial of their motion to compel discovery fell outside the range of reasonable and principled outcomes.

Affirmed.

/s/ Jane M. Beckering
/s/ Karen M. Fort Hood